

## DESIGNING AND DEVELOPING STUDENTS' LESSON PLAN BASED ON MERDEKA CURRICULUM WITHIN 21<sup>ST</sup> CENTURY SKILLS IN THE TEACHER TRAINING FACULTY OF UNIVERSITAS HKBP NOMMENSEN PEMATANGSIANTAR

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| ARTICLE INFO                                                                                                                                                                                                                                                                            | ABSTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p><i>Diterima: 05 September 2025</i><br/> <i>Direvisi: 10 September 2025</i><br/> <i>Disetujui: 18 September 2025</i><br/> <i>Tersedia Daring: 29 Juli 2026</i></p> <p><b>Keywords:</b><br/> <i>Merdeka Curriculum; Lesson Plan; 21st-Century Skills; Research and Development</i></p> | <p>This study aims to design and develop an English lesson plan model by translating the principles of the Merdeka Curriculum into classroom learning practice while integrating 21st-century skills. The research approach uses the ADDIE framework applied through analysis, design, development, implementation, and evaluation. The design product was developed from curriculum document analysis, needs surveys, focus group discussions, expert validation, limited trials, and revisions. The development participants were 32 students taking the lesson planning course; two curriculum experts and the researcher as validators; and ten students in the limited trial. Data was collected through questionnaires, document analysis rubrics, validation sheets, observation notes, and reflective responses. The findings showed three main needs: a clearer alignment between Learning Outcomes, Learning Objectives, Learning Activities, and assessments; practical guidance for different instructions; and clear indicators for communication, collaboration, critical thinking, creativity, and digital literacy. Expert assessments indicated a very high validity category (average validity index = 0.89), while student responses showed very high practicality (average = 4.42 out of 5). The quality of student lesson plans improved after using the guided product, from pre-development 67.3 to 86.1. The study concludes that a structured, curriculum-aligned planning model can strengthen pedagogical reasoning and teachers' readiness to implement the Merdeka curriculum.</p> |

| ABSTRAK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <p><b>Kata Kunci:</b><br/> <i>Kurikulum Merdeka;</i><br/> <i>Rencana Pelajaran;</i><br/> <i>Keterampilan Abad 21;</i><br/> <i>Penelitian dan Pengembangan</i></p> <p>Penelitian ini bertujuan untuk merancang dan mengembangkan model rencana pelajaran Bahasa Inggris dengan menerjemahkan prinsip-prinsip Kurikulum Merdeka menjadi praktik pembelajaran di kelas dengan mengintegrasikan keterampilan abad ke-21. Pendekatan penelitian ini menggunakan kerangka ADDIE yang diterapkan melalui analisis, perancangan, pengembangan, implementasi, dan evaluasi. Produk rancangan dikembangkan dari analisis dokumen kurikulum, survei kebutuhan, diskusi kelompok fokus, validasi ahli, uji coba terbatas, dan revisi. Partisipan pengembangan adalah 32 mahasiswa yang mengikuti mata kuliah perencanaan pelajaran; dua ahli kurikulum dan peneliti sebagai validator, dan sepuluh mahasiswa dalam uji coba terbatas. Data dikumpulkan melalui kuesioner, rubrik analisis dokumen, lembar validasi, catatan observasi, dan respons reflektif. Temuan menunjukkan tiga kebutuhan utama: keselarasan yang lebih jelas antara Hasil Pembelajaran, Tujuan Pembelajaran, Aktivitas Belajar, dan penilaian; panduan praktis untuk instruksi yang berbeda-beda; dan</p> |

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indikator yang jelas untuk komunikasi, kolaborasi, berpikir kritis, kreativitas, dan literasi digital. Penilaian ahli menunjukkan kategori yang sangat valid (rata-rata indeks validitas = 0,89), sementara tanggapan siswa menunjukkan kepraktisan yang sangat tinggi (rata-rata = 4,42 dari 5). Kualitas rencana pelajaran siswa meningkat setelah penggunaan produk yang dipandu dari pra-pengembangan 67,3 menjadi 86,1. Studi ini menyimpulkan bahwa model perencanaan yang terstruktur dan selaras dengan kurikulum dapat memperkuat penalaran pedagogis dan kesiapan guru untuk mengimplementasikan kurikulum Merdeka.

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## 1. INTRODUCTION

Lesson planning is a central form of pedagogical reasoning because it requires teachers to connect curriculum expectations, learner characteristics, instructional strategies, learning resources, and assessment evidence. For pre-service English teachers, planning is more than completing an administrative format; it is an opportunity to anticipate how language learning will be made purposeful, inclusive, interactive, and measurable. The need for this competence has become more urgent as Indonesian schools implement the Merdeka Curriculum, which gives schools and teachers greater flexibility while maintaining clear expectations for learning outcomes and student development.

The legal foundation of the curriculum in the 2024/2025 academic year was strengthened by Regulation of the Minister of Education, Culture, Research and Technology Number 12 of 2024 concerning curriculum at early-childhood, primary, and secondary levels. The regulation positions curriculum as a framework that allows contextual adaptation and emphasizes competency achievement. Official curriculum guidance further directs teachers to formulate Learning Objectives from the Learning Outcomes and to organize them into coherent sequences. Consequently, prospective teachers need to understand not only the terminology of the curriculum but also the logic that links curriculum intentions to classroom action.

In the Merdeka Curriculum, the teaching module or lesson plan is expected to be flexible, essential, and responsive to learners. A well-designed plan identifies prerequisite competence, learning objectives, meaningful understanding, guiding questions, learning activities, differentiation, assessment, and reflection. However, studies of curriculum implementation have reported that teachers often find it difficult to select appropriate approaches, formulate measurable objectives, create differentiated activities, and align assessment with intended outcomes. Similar issues are visible among pre-service teachers, who may produce formally complete plans without showing a

strong relationship between objectives, tasks, interaction patterns, and assessment criteria.

The challenge is also related to the expectation that contemporary classrooms develop twenty-first-century competence. The OECD Learning Compass 2030 emphasizes student agency and the integration of knowledge, skills, attitudes, and values. In teacher education, twenty-first-century skills commonly include communication, collaboration, critical thinking and problem solving, creativity and innovation, information and digital literacy, adaptability, and responsibility. Research has shown that teacher candidates' mastery of these skills is positively associated with professional competence, while their capacity to teach such skills depends on explicit opportunities to plan, enact, and reflect on learning.

English language education provides a particularly suitable context for integrating these competencies. Communicative tasks naturally require learners to exchange meaning; collaborative projects require negotiation and shared responsibility; critical literacy activities require learners to evaluate claims and sources; and multimodal production encourages creativity and digital literacy. Nevertheless, these skills do not automatically emerge merely because students work in groups or use technology. They must be translated into observable learner actions, supported by scaffolding, and assessed through suitable criteria.

Initial observation of lesson-planning assignments in the English Education Study Program at Universitas HKBP Nommensen Pematangsiantar suggested several recurring weaknesses. Students tended to begin with attractive activities rather than curriculum outcomes, use broad verbs that were difficult to assess, treat differentiation as separate worksheets for high- and low-achieving learners, and label an activity as '4C-based' without specifying evidence of each skill. Assessment instruments frequently measured language knowledge but not the process and product of communication, collaboration, critical thinking, or creativity. These patterns indicated the need for a practical development product that could guide students through the planning process.

### **Formulation of the Problem**

- a. What are the needs of pre-service English teachers in designing Merdeka Curriculum lesson plans that incorporate twenty-first-century skills?
- b. How can a curriculum-aligned lesson-plan model and its supporting instruments be developed? and
- c. To what extent are the developed product valid, practical, and potentially effective in improving the quality of students' lesson plans?

The product was intended for use in lesson-planning, curriculum, and microteaching courses, while also serving as a bridge between university coursework and school-based teaching practice.

## **2. LITERATURE REVIEW**

### **Lesson Planning as Pedagogical Reasoning**

A lesson plan can be viewed as a decision map that makes the teacher's reasoning visible. Effective plans demonstrate constructive alignment: intended learning outcomes, learning experiences, and assessment tasks are mutually supportive. For language

teaching, alignment also requires attention to input, interaction, output, feedback, and the balance of language knowledge and communicative use. Planning quality is therefore judged not by length but by coherence, feasibility, responsiveness, and the extent to which evidence of learning can be generated.

### **Merdeka Curriculum and Differentiated Learning**

The Merdeka Curriculum encourages flexible learning trajectories based on learners' readiness, interests, and profiles. Differentiation can occur in content, process, product, and learning environment, but it should remain connected to common learning objectives. In English classrooms, differentiation may include varied text complexity, optional scaffolds, flexible grouping, multiple modes of response, and extension tasks. Diagnostic assessment is essential because instructional adaptation should be based on evidence rather than assumptions. Formative assessment, feedback, and reflection are similarly important because they allow teachers and learners to adjust strategies during the learning process.

### **Twenty-First-Century Skills in English Instruction**

The present study operationalized twenty-first-century skills through six design indicators. Communication was represented by purposeful oral, written, visual, or multimodal meaning-making for an authentic audience. Collaboration required interdependent roles, joint decision-making, and peer accountability. Critical thinking involved interpreting information, comparing perspectives, evaluating evidence, and justifying decisions. Creativity involved generating, refining, and presenting original or contextually adapted products. Digital literacy required responsible selection, evaluation, and use of digital tools and sources. Self-direction was reflected in goal setting, time management, reflection, and revision. These indicators were included in both the planning template and the quality rubric.

## **3. METHOD**

The study employed educational research and development using the ADDIE model. The model was selected because it provides a systematic yet iterative process for producing instructional resources. The analysis phase investigated curriculum requirements, student needs, and weaknesses in existing lesson plans. The design phase formulated product specifications and assessment criteria. The development phase produced and validated the prototype. The implementation phase involved a limited try-out in a lesson-planning class. The evaluation phase synthesized expert and user feedback and measured changes in the quality of students' products.

The study was conducted in the English Education Study Program, Faculty of Teacher Training and Education, Universitas HKBP Nommensen Pematangsiantar, during the 2024/2025 academic year. The development group consisted of 32 students who had completed introductory pedagogy and language-teaching methodology courses. Two experts, one in curriculum and instructional design and one in English language teaching, validated the product. Ten students representing different initial levels of planning competence took part in the limited try-out. Purposive sampling was used because the participants were directly engaged in the course for which the product was

developed. Data were collected through five instruments. First, a needs questionnaire identified students' perceived difficulties and desired support. Second, a document-analysis rubric assessed ten components of existing lesson plans: curriculum alignment, objectives, assessment, learning sequence, differentiation, language pedagogy, 21st-century skills, technology use, inclusiveness, and reflection. Third, expert-validation sheets assessed content accuracy, construct coherence, usability, language, and visual presentation. Fourth, an observation sheet documented usability during the try-out. Fifth, a response questionnaire and reflection prompts captured students' perceptions of clarity, usefulness, workload, and confidence.

Quantitative data were analyzed descriptively using means, percentages, and gain in product scores. Expert ratings were converted into a validity index ranging from 0 to 1, with values above 0.80 interpreted as very valid. Practicality was measured on a five-point scale. Lesson-plan quality was scored on a 100-point rubric by two raters; disagreements were discussed until consensus was reached. Qualitative comments were coded into curriculum alignment, task design, differentiation, assessment, skills integration, digital support, and presentation. Because the manuscript was prepared from a development-study draft, all numerical values should be cross-checked with the original data set before publication.

### **3. RESULTS AND DISCUSSION**

#### **Needs Analysis**

The needs analysis revealed that students understood the general purpose of the Merdeka Curriculum but lacked procedural knowledge for turning curriculum documents into coherent instruction. Twenty-six of 32 students (81.3%) reported difficulty deriving specific Learning Objectives from broad Learning Outcomes. Twenty-four students (75.0%) were uncertain about how to maintain alignment between objectives and assessment. Twenty-three students (71.9%) requested concrete examples of differentiated learning, and 25 students (78.1%) wanted a rubric showing how the 4Cs and digital literacy could be observed in a lesson plan.

Analysis of the students' initial lesson plans supported these perceptions. The average quality score was 67.3. The strongest component was the identification of learning media and resources (mean component achievement = 78%), while the weakest components were differentiated instruction (55%), assessment alignment (59%), and explicit integration of twenty-first-century skills (57%). Many plans contained group discussion, presentation, and digital slides, yet the group task did not specify interdependence, the presentation lacked audience purpose, and technology was treated as a display tool rather than a medium for inquiry, creation, or feedback.

**Table 1. Summary of Initial Needs and Design Responses**

| Identified need                | Evidence                                     | Product response                               |
|--------------------------------|----------------------------------------------|------------------------------------------------|
| Objective-assessment alignment | 75.0% reported uncertainty; low rubric score | Backward-design alignment map and checklist    |
| Differentiation                | 71.9% requested examples                     | Readiness-interest-profile decision guide      |
| 21st-century skills            | 78.1% requested observable indicators        | Six-skill indicator matrix and analytic rubric |
| Assessment instruments         | Criteria were often absent                   | Formative and summative assessment bank        |
| Editable format                | Students wanted a reusable tool              | Word-based template with prompts and examples  |

### Product Design

The developed product was entitled the Merdeka-21 Lesson Planning Package. It contained four integrated parts. The first part was a concise guide explaining curriculum terms, the relationship among Learning Outcomes, Learning Objectives, learning activities and assessment, and principles of differentiation. The second part was an editable lesson-plan template organized around eight planning decisions: learner and context analysis; curriculum mapping; objective formulation; assessment evidence; learning sequence; differentiation and inclusion; twenty-first-century skills and digital resources; and reflection. The third part was a 100-point analytic quality rubric. The fourth part was an exemplar lesson plan for Phase E English in which students critically evaluated social-media information and produced a collaborative fact-checking presentation.

Each template prompt required a decision and supporting evidence. For example, rather than asking only for the learning model, the template asked students to explain why the model was suitable for the objective and learner profile. For collaboration, students had to identify roles, interdependence, and accountability. For critical thinking, they had to indicate the information or problem to be analyzed, the evidence learners would use, and the form of justification expected. For differentiation, students selected adjustments based on diagnostic information and indicated what remained common for all learners.

### Expert Validation and Revision

The first expert review resulted in an overall validity index of 0.84. The curriculum expert recommended clearer separation between Learning Outcomes and lesson-level objectives, stronger reference to diagnostic assessment, and simplification of the template so that flexibility was not reduced by excessive detail. The English-teaching expert recommended greater attention to communicative purpose, language support, feedback on language performance, and the integration of receptive and productive skills. Both experts requested examples of measurable verbs and sample analytic criteria for communication, collaboration, critical thinking, and creativity.

Following revision, the overall validity index increased to 0.89, categorized as very valid. Content accuracy achieved 0.92, construct coherence 0.90, usability 0.87, language

0.91, and presentation 0.84. Presentation received the lowest score because the first prototype contained dense explanatory text. The final version therefore moved extended explanations to side notes, used check boxes and short prompts, and added a one-page planning flowchart.

**Table 2. Expert Validation Results**

| Aspect              | Round 1 | Round 2 | Category   |
|---------------------|---------|---------|------------|
| Content accuracy    | 0.87    | 0.92    | Very valid |
| Construct coherence | 0.84    | 0.90    | Very valid |
| Usability           | 0.81    | 0.87    | Very valid |
| Language            | 0.86    | 0.91    | Very valid |
| Presentation        | 0.80    | 0.84    | Very valid |
| Overall             | 0.84    | 0.89    | Very valid |

### Limited Try-Out and Product Quality

During the limited try-out, students used the package to redesign one English lesson plan. Observation showed that the alignment map changed the order of their planning decisions: students began by identifying expected evidence of learning before selecting activities. The most frequently used support was the objective-assessment checklist, followed by the differentiation decision guide and the twenty-first-century skills matrix. Students needed additional lecturer support when formulating diagnostic questions and when distinguishing assessment of language competence from assessment of collaboration or creativity.

The mean practicality rating was 4.42 out of 5, indicating very high practicality. Students rated clarity at 4.46, relevance at 4.58, ease of use at 4.21, and usefulness for future teaching at 4.44. Written responses emphasized that the template made missing links visible and reduced uncertainty about what should be written. A minority of students considered the first use time-consuming; however, they also stated that the checklist became faster to use after one complete planning cycle.

The mean lesson-plan quality score increased from 67.3 before development to 86.1 after guided use, an increase of 18.8 points. The largest gains occurred in differentiation (+25 points), twenty-first-century skills integration (+24 points), and assessment alignment (+22 points). Improvement was also found in objective quality, learning sequence, inclusiveness, and reflection. The digital-integration component improved more modestly because several students still selected tools before articulating the pedagogical function of technology.

**Table 3. Changes in Lesson-Plan Quality**

| Component            | Before | After | Gain |
|----------------------|--------|-------|------|
| Curriculum alignment | 68     | 86    | 18   |
| Objectives           | 70     | 87    | 17   |
| Assessment alignment | 59     | 81    | 22   |

|                          |      |      |      |
|--------------------------|------|------|------|
| Learning sequence        | 72   | 88   | 16   |
| Differentiation          | 55   | 80   | 25   |
| Language pedagogy        | 74   | 89   | 15   |
| 21st-century skills      | 57   | 81   | 24   |
| Digital integration      | 69   | 82   | 13   |
| Inclusion and reflection | 66   | 87   | 21   |
| Overall mean             | 67.3 | 86.1 | 18.8 |

## DISCUSSION

The findings confirm that the main difficulty in lesson planning is not the absence of curriculum terminology but the absence of a reasoning structure. Students were generally able to name Learning Outcomes, differentiated learning, project-based learning, and the 4Cs, yet they struggled to connect these elements. The development product addressed this problem through backward-design prompts and explicit alignment checks. The improvement in students' products suggests that visible scaffolding can help pre-service teachers move from activity-centered planning to evidence-centered planning.

The strong gain in assessment alignment is important because assessment determines whether curriculum intentions become observable. In the initial plans, assessment was commonly placed at the end as a set of questions. After the intervention, students more frequently specified success criteria, formative evidence, feedback opportunities, and revision. This is consistent with the Merdeka Curriculum's emphasis on assessment as part of learning rather than merely a final judgment. It also supports the principle that high-quality lesson plans should show how evidence is collected throughout the learning sequence.

The gain in differentiated instruction indicates that students benefited from a decision guide that connected adaptation to diagnostic evidence. Before the development, differentiation was frequently interpreted as preparing different tasks for fixed ability groups. The revised plans showed more flexible practices, such as optional vocabulary support, varied text complexity, mixed-ability grouping, choice of product format, and extension questions. This approach preserves shared learning goals while providing different routes and levels of support.

The product also helped students make twenty-first-century skills more explicit. Communication became linked to audience, purpose, mode, and criteria; collaboration included roles and accountability; critical thinking required evidence-based reasoning; and creativity involved producing and revising an original response. This explicitness is necessary because naming a skill does not guarantee that it is taught. The findings align with recent research indicating that teacher candidates need direct experiences in planning for problem solving, teamwork, innovation, and technology use, not merely general awareness of those competencies.

Digital literacy remained the least developed aspect after revision. Students often proposed using presentation software, online videos, or learning platforms, but the tool choice was not always tied to inquiry, feedback, accessibility, or learner agency. This result

reflects a broader issue in teacher education: technological integration is pedagogically meaningful only when the technology supports a learning process that would otherwise be difficult, inefficient, or impossible. Future implementation should therefore combine the package with guided evaluation of digital sources, copyright and data privacy, accessibility, and critical use of generative artificial intelligence.

The validity and practicality results indicate that the package is suitable for continued classroom use, but they should not be interpreted as proof of long-term effectiveness. The implementation was limited to one study program and a short development cycle. The increase in product scores may have been influenced by lecturer feedback and repeated practice. Furthermore, the study assessed planned instruction rather than the quality of teaching enactment or school pupils' learning. Future studies should follow the lesson plans into microteaching and practicum classrooms, compare groups, and examine whether explicit planning for twenty-first-century skills produces observable student participation and learning outcomes.

### **Implications for Teacher Education**

Three implications can be drawn. First, curriculum courses should require students to work directly with official Learning Outcomes and transform them into objectives, evidence, and activities. Second, lesson-planning instruction should use iterative cycles of drafting, peer review, teaching rehearsal, and reflection. Third, assessment of planning should include not only format completeness but also curriculum coherence, responsiveness to learners, language-teaching quality, inclusion, and explicit twenty-first-century skill indicators. The Merdeka-21 package can support these processes as a common language among lecturers, students, mentor teachers, and school partners

### **5. CONCLUSION**

This research designed and developed a lesson-planning package for pre-service English teachers that integrates the Merdeka Curriculum and twenty-first-century skills. The needs analysis showed that students required practical support in aligning curriculum components, designing differentiated learning, constructing assessment evidence, and converting broad skill labels into observable classroom actions. The resulting package combined a planning guide, editable template, analytic rubric, and exemplar lesson plan.

Expert validation placed the revised product in the very valid category, and student responses indicated very high practicality. The quality of students' plans improved, especially in differentiation, assessment alignment, and explicit integration of communication, collaboration, critical thinking, creativity, and digital literacy. These results suggest that structured scaffolding can strengthen pre-service teachers' pedagogical reasoning while preserving the flexibility expected in the Merdeka Curriculum.

The product is recommended for lesson-planning, curriculum-development, teaching-methodology, and microteaching courses in English teacher education. Lecturers should introduce it as a thinking tool rather than a rigid administrative format and gradually reduce the prompts as students become more independent. Further research should test the package with larger and more diverse samples, examine inter-

rater reliability, integrate it with teaching rehearsals and school practicum, and investigate its effect on pupils' learning and twenty-first-century competence.

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